UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,110	11/25/2003	Richard Paul Messmer	124383-2	1274

23413 7590 01/14/2009

CANTOR COLBURN, LLP
20 Church Street
22nd Floor
Hartford, CT 06103

EXAMINER	
PROCTOR, JASON SCOTT	
ART UNIT	PAPER NUMBER
2123	

NOTIFICATION DATE	DELIVERY MODE
01/14/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary	Application No.	Applicant(s)	
	10/723,110	MESSMER ET AL.	
	Examiner	Art Unit	
	JASON PROCTOR	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 29-33 were rejected in the Office Action entered on 18 July 2008.

Applicants' response submitted on 20 October 2008 has amended claims 31-33. Claims 29-33 are pending in this application.

Claims 29-33 are rejected.

Response to Arguments – 35 USC § 103

1. In response to the previous rejections under 35 U.S.C. § 103, Applicants argue primarily that:

> Applicants respectfully submit that Son does not disclose, teach, or suggest the bolded limitations of claim 29. The invention recited in claim 29 distinguishes from the cited art in that it provides for a single model template that is useful for an "endless variety of business processes." Whereas, the cited art operates on multiple templates form various entities to build a simulation model. (Remarks, page 6)

The Examiner respectfully traverses this argument as follows.

Applicants claim:

"**a model template** defined by a plurality of tables, where each table is defined by one or more of entity parameters, task parameters, and resource parameters and where each table includes a mapping to one or more other tables of the plurality of tables"

Where "a model template" corresponds to Son's teaching of a **modeling template** [*"Each of these component models would have views tailored to specific modeling scenarios. These scenarios would be defined by different **modeling templates** - such as an equipment simulation, a material flow simulation, a supply chain simulation, and so forth."* (Son, page 1558, right column)].

Where "a plurality of tables, where each table is defined by one or more of entity parameters, task parameters, and resource parameters" corresponds to Son's teaching of the same

[Son, page 1565, Figure 5 "ProModel **Templates Model for the Example System**", note a plurality of tables including **the column "entities" (claimed "entity parameters"), the column "operation" (claimed "task parameters"), the columns "Cap.", "Units", etc. (claimed "resource parameters")].**

Where "each table includes a mapping to one or more other tables of the plurality of tables" corresponds to the relational database taught by Son to enable a simulation [*"From the schema in the previous section, we generated a collection of database tables in MS Access 97 (see Figure 3).* (page 1562, "4.2 Database Instantiation")]. The language "each table including a mapping" is understood to mean both "each table storing an enumerated mapping or being named by an enumerated mapping in another table". Relational databases and their inherent mappings between tables are old and well known in the art. See "How Stuff Works – What are relational databases?" internet article made of record in the previous Office Action.

2. Applicants further argue that:

> Moreover, because Son fails to disclose the model template and tables as recited in the first element, Son fails to disclose a database that stores the model template and the plurality of tables and a model application the retrieves the model template and the plurality of tables. (Remarks, page 7)

The Examiner respectfully traverses this argument as follows.

> Regarding the claimed database, Applicants claim:
>
> a database that stores the model template and the plurality of tables;

Where "**a database** that stores the model template and the plurality of tables" corresponds to Son's teaching of **a database** [*"From the schema in the previous section, we generated a collection of database tables in* ***MS Access 97*** *(see Figure 3).* (page 1562, "4.2 Database Instantiation")].

3. Further regarding the claimed "model application that retrieves the model template and the plurality of tables", Applicants remark that:

> The Examiner relies on the model builder as described in section 5 to disclose the model application as recited in claim 29. As best understood by Applicants, the model builder of Son builds a simulation model based on the populated tables ("stations" table and "jobs" table of Figure 4), templates (a location template, a process template, a routing template, an arrivals template), and an initialization file.
>
> The model templates or templates, as referred to by Son in the Abstract, section 1, and sections 5.1-5.3 are commercial based templates for translating the neutral representation of the model data to commercial simulation packages. The templates are part of the commercial model builders (Arena, ProModel, etc.). The templates are not defined by the plurality of tables shown in Figure 3. Thus, the templates disclosed in Son are not are not the model template. Thus, Son fails to disclose retrieving the model template as recited in claim 29. (Remarks, page 8)

The Examiner respectfully traverses this argument as follows.

Son provides ample disclosure to enable a person of ordinary skill in the art to construct the claimed invention. See, for example, "5 Design of Model Builder", pages 1562-1566. Son is describing a **relational database application** that **stores and retrieves** templates, parameters, mappings, and other database objects.

For example, Son teaches [*"The first step in creating the simulation model is the construction of the shop floor. The model builder creates this shop floor from the "stations" table in the database (see Figure 4-a). Each station in that table is associated with a "location" template in Promodel (see Figure 5-a). The data for first two columns in this template come directly from the stations table. The remaining columns in the template are defaults. The use of the remaining data in the locations table is described in Section 5.2."* (Id.)].

For example, Son teaches [*"The shop floor was constructed so that any possible routings and processing times can be implemented. To control the flow of jobs through the shop during a particular run, Promodel requires explicit values for the routings and processing times. Variables for these values are contained in the process template and the routing template; exact values are contained in the initialization file, (see Figures 5-a, 5-b). The initialization file contains the data for each specific run of the simulation. The model builder is designed so that the system is data-driven, the same model can be run many times by simply changing this file."* (Id.)].

The claim language includes "automatically associating" data with the model template, and "automatically performing allocations" of data to the parameters. Son teaches "initializing" the simulation model. In the examples shown above and throughout the reference, Son teaches

that "initializing" means "automatically associating" and "automatically performing allocations" according to the claim language.

4. Further, the Kosiba reference teaches a collection of tables, relationships, parameters, and other database objects that form a model [See, for example, FIG. 4 and related discussion, primarily (column 8, line 30 et seq.); *"After dividing up the workforce into management units (and potential future management units not yet in existence), a virtual representation of each management unit is developed. This virtual representation is a data structure that contains attributes such as..."* (column 8, lines 52-65); *"The workflow relationship is typically modeled through mapping arrangements between management units and contact demand units."* (column 10, lines 12-24); *"The contact demand units, the management units, and the workflow relationship are then used to develop and validate an analytic model of the contact center (step 415). The analytic model may be a computer model stored in a memory or a database."* (column 10, lines 25-41); etc.].

Applicants submit similar arguments for the other pending claims. These arguments are traversed as shown above.

Applicants' arguments have been fully considered but have been found unpersuasive. The Son and Kosiba prior art renders obvious the inventions of claims 29-33 as shown below.

Claim Objections

5. The previous claim objections are withdrawn in response to the amendments to the claims.

Claim Rejections - 35 USC § 101

6. The previous rejection of claim 33 under 35 U.S.C. § 101 has been withdrawn in response to the amendments to the claims and Applicants' remarks.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. § 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to

the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. § 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a).

7. Claims 29-33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over "Automatic Generation of Simulation Models from Neutral Libraries: An Example" by Son et al. ("Son") in view of US Patent No. 7,103,562 to Kosiba et al. ("Kosiba").

Regarding claim 29, Son teaches:

A system to simulate a process of discrete events or tasks having a plurality of available resources associated therewith [*"The role of the model builder is to create a discrete-event simulation model from the neutral description of the system and the actual data in the database."* (page 1562, "5 Design of the Model Builder")], the system comprising:

A model template defined by a plurality of tables where each table is defined by one or more entity parameters, task parameters, and resource parameters and where each table includes a mapping to one or more other tables of the plurality of tables (Figures 3-4);

A database that stores the model template and the plurality of tables [*"From the schema in the previous section, we generated a collection of database tables in MS Access 97 (see Figure 3). The tables in the figure belong to two classes. The first class contains a table for each entity in the EXPRESS schema. The second class contains tables that specify the relationship among the entities."* (page 1562, "4.2 Database Instantiation")];

A model application in communication with the database and which receives commands from a user, and, in response to the commands, builds a simulation model by retrieving the

model template and the plurality of tables [*"The first step in creating the simulation model is the construction of the shop floor. The model builder creates this shop floor from the 'stations' table in the database (see Figure 4-a). Each station in that table is associated with the 'location' template in Promodel (see Figure 5-a). The data for first two columns in this template come directly from the stations table."* (page 1564, "5.1 Shop Floor"); etc.]

by automatically associating entity, task, and resource input data from a business database system with the model template, and by automatically performing allocations of the resource input data to the task parameters [*"To control the flow of jobs through the shop during a particular run, Promodel requires explicit values for the routings and processing times. Variables for these values are contained in the process template and the routing template; exact values are contained in the initialization file, (see Figures 5-a, 5-b). The initialization file contains the data for each specific run of the simulation."* (page 1564, "5.2 Job Flow Through the Shop"); *"Job arrival data is contained in the arrivals template, which contains variables called Entity, Location, Qty Each, First Time, Occurrences, Frequency, Logic, and Disable."* (page 1564, "5.3 Job Arrival Information"); etc.]; and

A server that performs a simulation of the process by processing the simulation model, and based on the simulation, generates an output data file containing output data representative thereof [*"After simulation model has been run, the results have been stored in returned_results table (see Figure 6)."* (page 1566, "5.4 Simulation Result Information")].

Son does not expressly teach an optimizing application in communication with the model application and which receives commands from a user, and, in response to the commands, selects one or more of the entity parameters, the task parameters, and the resource parameters of the

simulation model and an objective function, defines bounds of the selected one or more of the entity parameters, the task parameters, and the resource parameters, and generates values for the objective function.

Kosiba teaches a system that can easily produce accurate staff plans, budget plans and behavioral analysis for a business (column 3, lines 5-8) that overcomes the limitations of prior art discrete event simulation systems that are complex to develop, difficult to use and too computationally slow for budget and staff planning (column 2, lines 51-67), wherein a discrete event simulation model is created based on inputs such as available resources and the performance of the resources (column 12, lines 35-65).

Kosiba teaches an optimizing application in communication with the model application and which receives commands from a user, and, in response to the commands, selects one or more of the entity parameters, task parameters, and resource parameters of the simulation model and an objective function, defines bounds of the selected entity parameters, task parameters, and resource parameters, and generates values for the objective function (column 24, line 46-column 25, line 45).

Son and Kosiba are analogous art since they are both directed to the building of a discrete event simulation model for a business process for the purpose of performance analysis.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system to simulate a process of discrete events as taught by Son to include the optimizing application that generates values for an objective function as taught in Kosiba since Kosiba teaches a system that can easily produce accurate staff plans, budget plans and behavioral analysis for a business (Kosiba, column 3, lines 5-8) that overcomes the

limitations of prior art discrete event simulation systems that are complex to develop, difficult to use and too computationally slow for budget and staff planning (Kosiba, column 2, lines 51-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of Applicants' invention to combine the teachings of Son and Kosiba to arrive at the invention specified in claim 29.

Regarding claim 30, Son teaches automatically performing allocations is based on processing of an efficiency resource matrix [*"The initialization file contains the data for each specific run of the simulation. The model builder is designed so that the system is data-driven, the same model can be run many times by simply changing this file. The initialization file contains process plan data, which is a collection of 3-dimensional arrays (product_id, operation_id, n) where n =1,...,5. The meanings of the 5 values of n are: current location, processing time at this location, next processing station, travel time, next physical location. The actual data values are derived from the stations table and the operations table in the database."* (page 1564, "5.2 Job Flow Through the Shop")].

Regarding claim 31, Son teaches an output template that is stored in the database and wherein the server generates the output data file based on the output template [*"Performance names of interest have been provided in Figure 4-c. Davg(location_Busy) represents the utilization of resource. The model builder understands this predefined name for performance measures. After simulation model has been run, the results have been stored in returned_results table (see Figure 6)."* (page 1566, "5.4 Simulation Results File")].

Claim 32 recites a method performed by the system of claim 29. Son in view of Kosiba disclose a system and similarly disclose the method performed by that system. Claim 32 is obvious over Son in view of Kosiba for the rationale shown above in regard to claim 29.

Claim 33 recites a storage medium encoded with machine-readable program code for performing a method according to claim 32. Son discloses a computer software simulation package (abstract) while Kosiba's disclosure concerns a "computerized system and method" (column 1, lines 15-21). Therefore claim 33 is obvious over Son in view of Kosiba for the rationale shown above in regard to claim 29.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Proctor
Examiner
Art Unit 2123

jsp

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123